

Stormwater and Flooding

ON TO 2050 Strategy Paper

CMAP Environment and Natural Resources
Working Committee

March 2, 2017

Agenda

- Brief recap of purpose and scope
- Feedback on first memo
- Follow up memo on flooding impacts
- Next Steps



Purpose

- Integrate a better understanding of the extent and costs of both urban and riverine flooding, as well as how those could grow due to climate change, into ON TO 2050.
- Identify the barriers to effective stormwater management and develop policy approaches to reduce flooding impacts.
- Focus efforts in areas of greatest need in the region.
- Build connections with other policy work being developed for the next plan.



Scope of work

Step 1: Causes and drivers of flooding

Step 2: Existing flooding impacts and extent

Step 3: Existing responses and approaches to stormwater and flood mitigation and prevention

Step 4: Identify barriers to effective stormwater management

Step 5: Building an effective regional response



Memo 1: Causes and impacts of flooding

Purpose of the first memo:

- Qualitative review to establish a core understanding of the causes of flooding
- Summarize documented damages of flooding and explore where flooding impacts are less widely known.
- Received great feedback from ENR committee members and additional partners at: MWRD, Openlands, CNT, Sierra Club, Friends of the Chicago River, ILASFM, IDNR, and MPC



Memo 1: Causes and impacts of flooding

Updating the memo:

- Refinements of the regulatory structure section
- Added habitat loss and degradation
- Additional details about inadequate maintenance and replacement.
- Identified additional drivers related to existing relief and insurance programs.
- Details on water resource impacts, among others
- Also received lots of good information about existing programs and policy recommendations that will be helpful in later stages of the project.



Follow-up memo

Purpose of this memo:

- Analyze damages documented by Federal Assistance programs within Chicago Region
- Explore geography of damages in relation to community characteristics
- Summarize transportation impacts



Follow-up memo

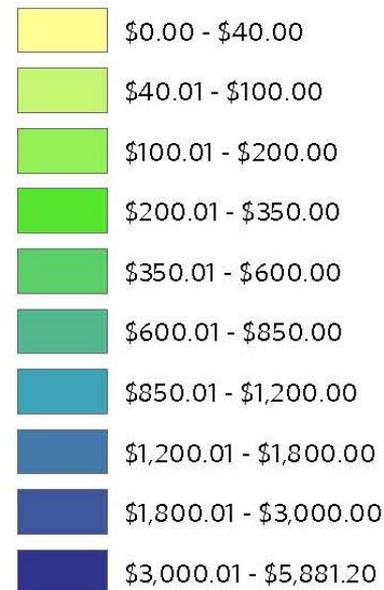
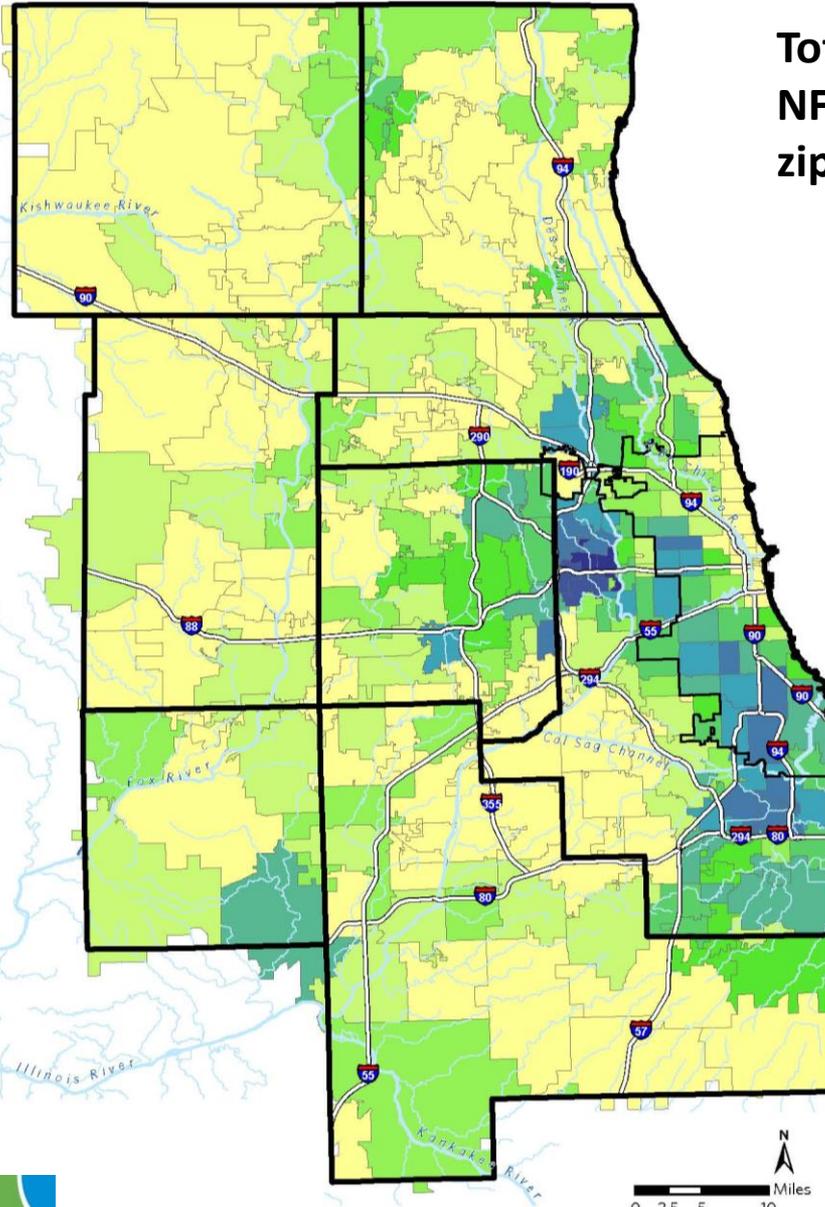
Damages documented by federal assistance programs

- Purpose: better understand the location and costs of flooding damages within the Chicago region.
- Relied on:
 - National Flood Insurance Program (NFIP) policies, claims, and payments
 - FEMA disaster relief Individual Assistance (IA) grants
 - Small Business Administration (SBA) loans
- Did not include the following datasets at this time:
 - Private insurance
 - Federal assistance to local governments.



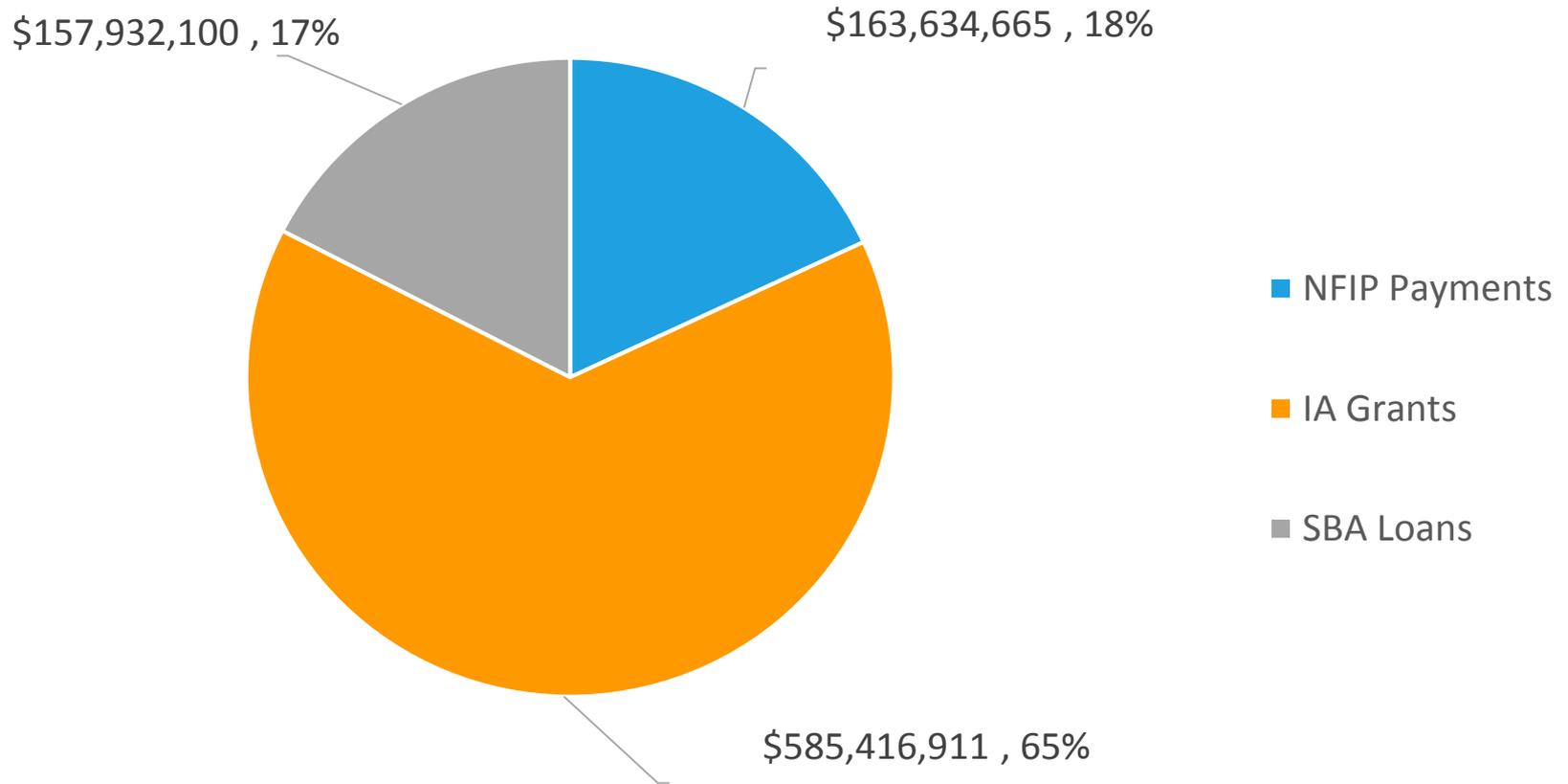
Damages documented by federal programs

Total flooding damage payments associated with NFIP, IA, and SBA programs per 2010 household by zip code in the Chicago region from 2003 to 2015.



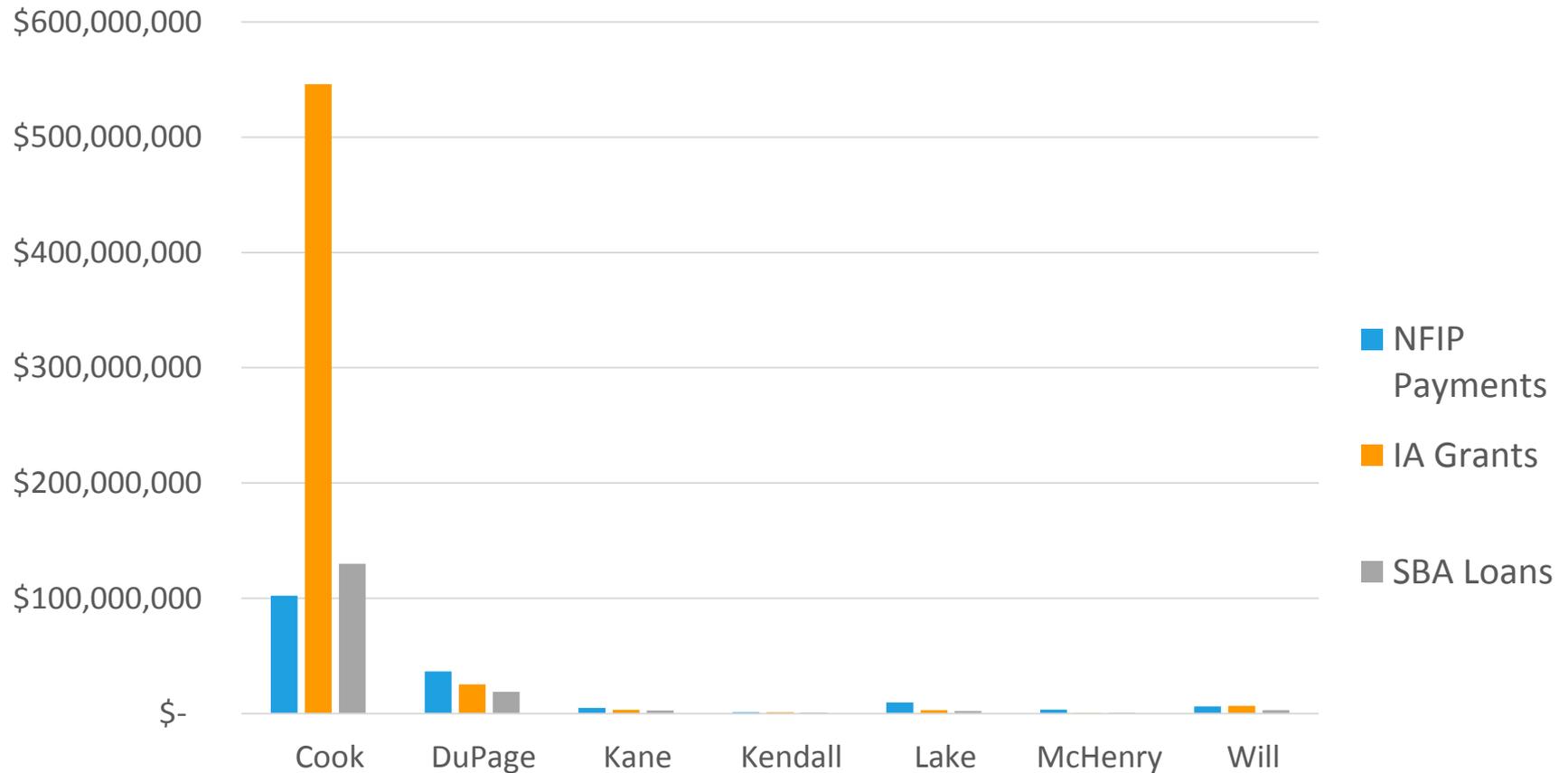
Damages documented by federal programs

Total flooding damage payments by federal program - NFIP, IA, and SBA - in the Chicago region from 2003 to 2015.



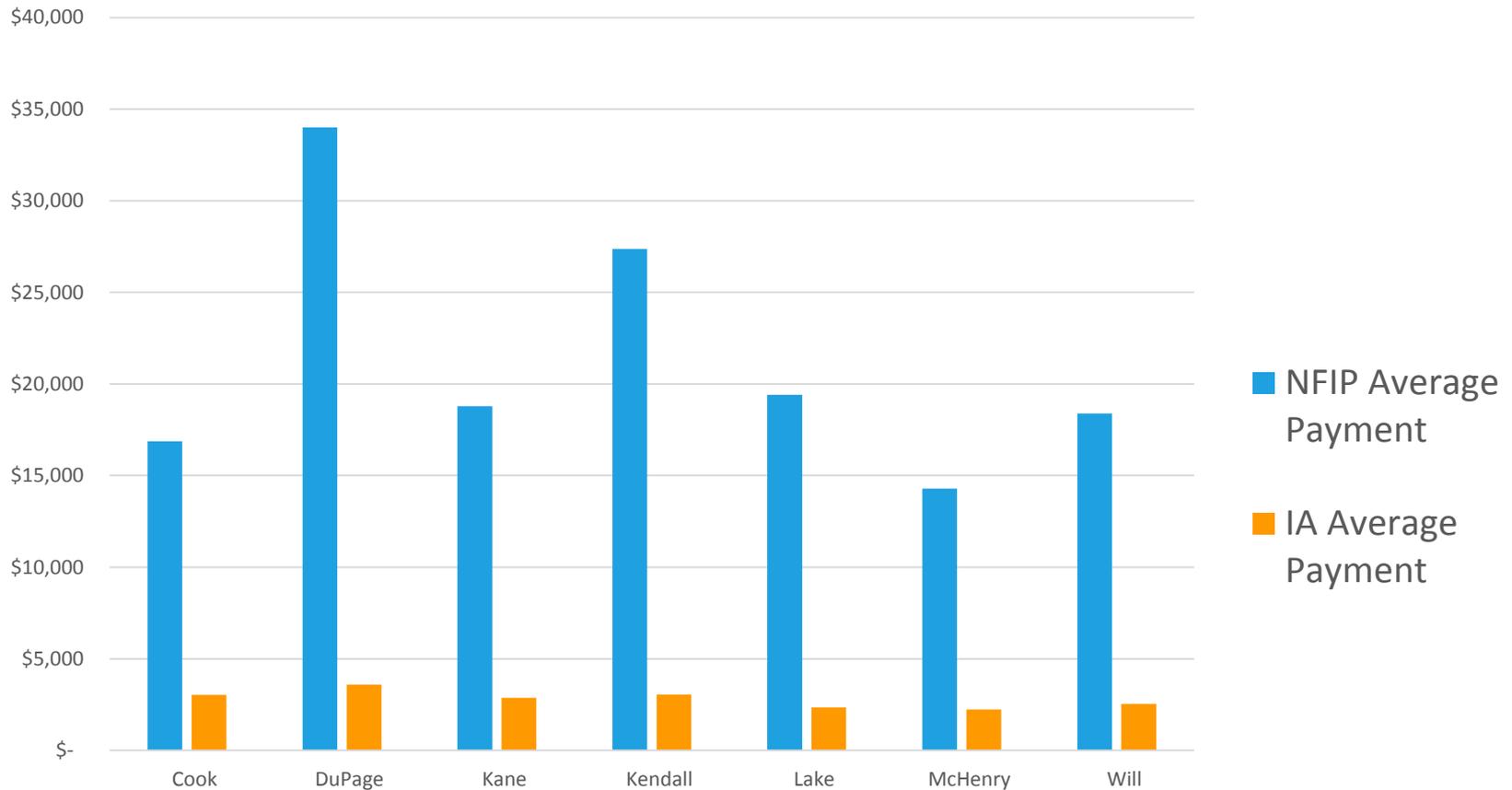
Damages documented by federal programs

Total flooding damage payments associated with NFIP, IA, and SBA programs by county from 2003 to 2015.



Damages documented by federal programs

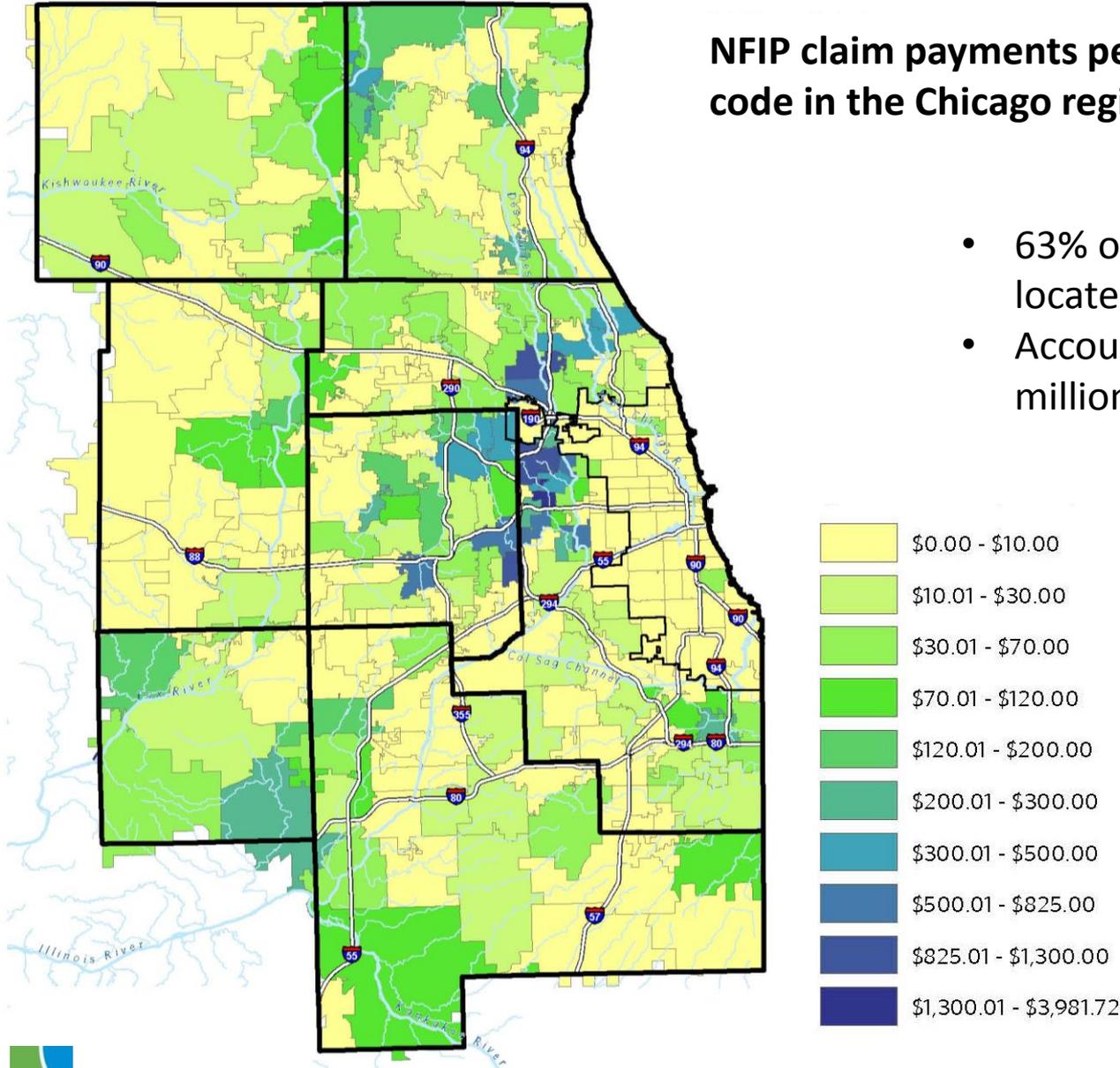
Average payment per NFIP claim and IA grant by county from 2003 to 2015.



Damages documented by federal programs

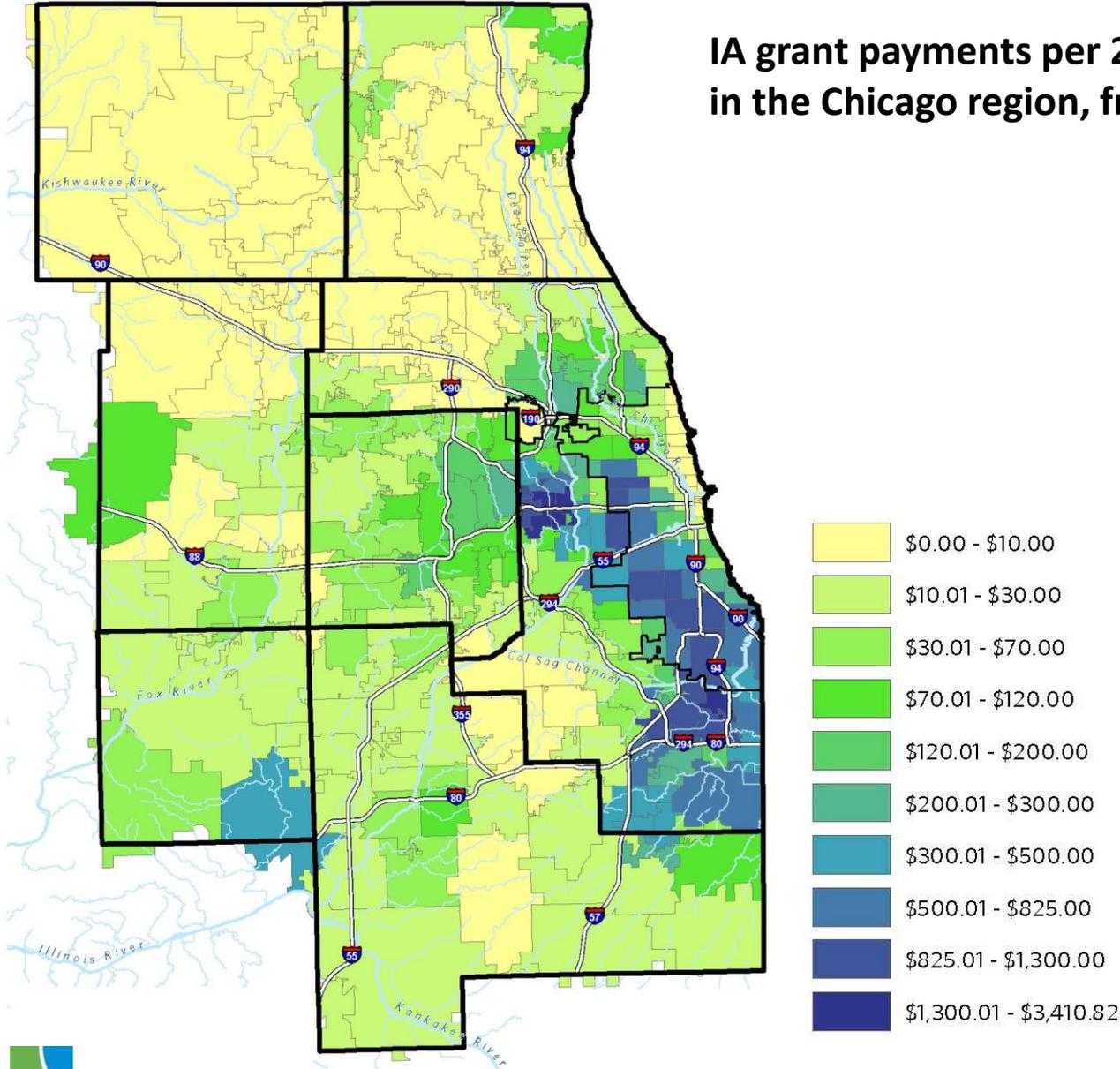
NFIP claim payments per 2010 household by zip code in the Chicago region, from 2003 to 2015.

- 63% of paid NFIP claims were located in the floodplain
- Accounting for 72% or \$115 million of total NFIP payments



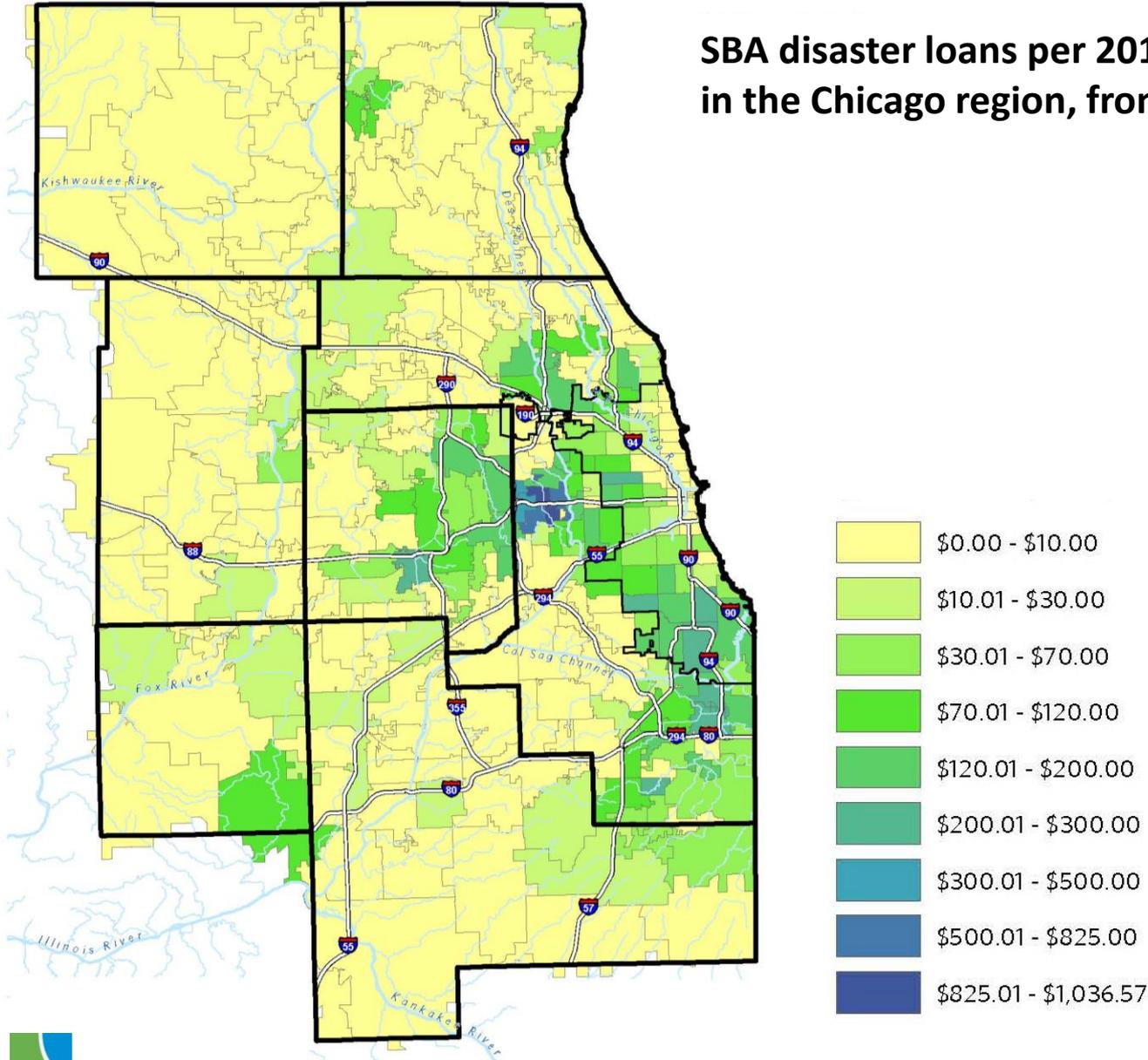
Damages documented by federal programs

IA grant payments per 2010 household by zip code in the Chicago region, from 2003 to 2015.



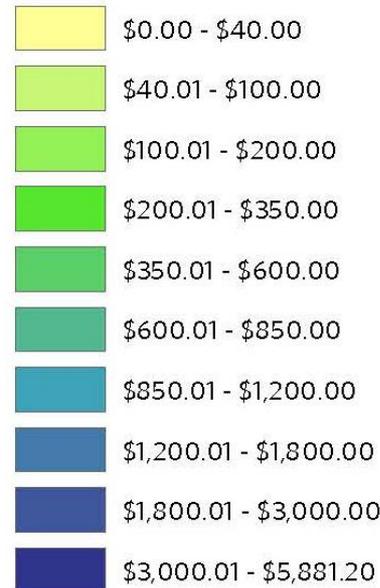
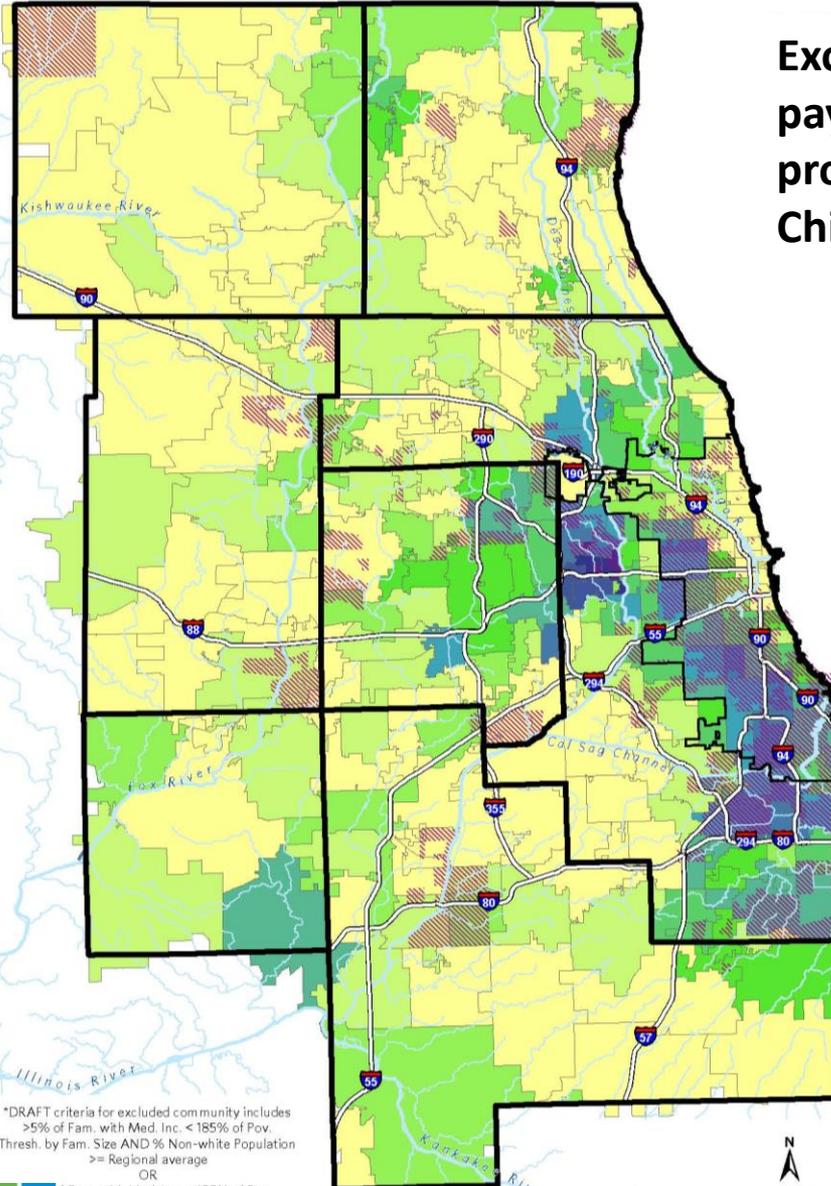
Damages documented by federal programs

SBA disaster loans per 2010 household by zip code in the Chicago region, from 2003 to 2015.



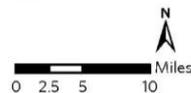
Flooding damages and excluded communities

Excluded communities and total flooding damage payments associated with NFIP, IA, and SBA programs per 2010 household by zip code in the Chicago region, from 2003 to 2015.



*DRAFT criteria for excluded community includes
 >5% of Fam. with Med. Inc. < 185% of Pov.
 Thresh. by Fam. Size AND % Non-white Population
 >= Regional average

OR
 >5% of Fam. with Med. Inc. < 185% of Pov.
 Thresh. by Fam. Size AND % LEP Population
 >= Regional average



Data limitations and barriers

- Lack of private insurance data
 - IDNR found \$1.09 billion or 60 percent of payouts came from private insurance from 2007-2014.
 - Different rates of securing private insurance
- Economic barriers in obtaining insurance
- Flooding associated with smaller storm events
- Underutilization of available resources



Follow-up memo

Transportation Impacts

- Declines in performance
 - Street and rail closures
 - Disruptions in transit service
 - Contribute to incidents
 - Declines in active transportation
- Increased infrastructure and repair
 - Shorten life expectancy
 - Catastrophic impacts, particularly with bridges and culverts
 - Increased replacement costs as drainage systems are designed for changing precipitation



Follow-up memo

Transportation Impacts

- Inclement weather causes 15 percent of congestion, increasing the number of crashes and delays and reducing road capacity.
- Exploring data / animation:
 - Hourly precipitation data for Cook County from the Midwest Regional Climate Center, 2013-2015.
 - Travel speeds using data from the national Performance Measurement Research Data set provided in 5-minute increments.



Next steps

- **March – Follow-up Memo:** documented damages and transportation impacts
 - Please send comments by March 16, 2017 – nbeck@cmap.illinois.gov
- **April – Memo 2:** Current responses and priority barriers
- **May – Memo 3:** Approaches to priority barriers and a draft framework
- **June – Draft Strategy Paper**
- **July – Final Strategy Paper**



Comments or Questions

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